

NOAA In Your State

North Carolina

NOAA is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.

The following is a summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory: Starting with highlights, then by [congressional districts and cities or towns](#), [coastal programs](#), and then [statewide programs](#).

Highlights of NOAA in North Carolina

Beaufort Laboratory	Beaufort	NC-3
Habitat Conservation Division Field Office	Beaufort	NC-3
North Carolina National Estuarine Research Reserve	Beaufort	NC-3,7
U.S.S. Monitor National Marine Sanctuary	Cape Hatteras	NC-3,7
Interdisciplinary Scientific Environmental Technology Cooperative Science Center	Greensboro	NC-12

The state of North Carolina also has one Cooperative Institute, three Weather Forecasting Offices, one Regional Office, two Labs and Field Offices, one Cooperative Science Center, seven Science on a Sphere® exhibitions, three National Estuarine Research Reserves, and one Habitat Focus Area.

Weather Forecast Offices

New Bern NC-3

Raleigh NC-4

Wilmington NC-7

National Weather Service (NWS) Weather Forecast Offices (WFO) are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of North Carolina. There are 122 [WFOs nationwide](#) of which four are in North Carolina. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media, [weather.gov](#), and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction [centers](#) and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current North Carolina weather, visit [www.weather.gov](#) and, on the national map, click on the relevant county or district.

Science On a Sphere®

Wilson NC-1

Manteo NC-3,7

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. They are located at the Imagination Station Science Museum in Wilson and the North Carolina Aquarium in Manteo.

NC- 1 **Durham**

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference

network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

Wilson

Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at Imagination Station Science Museum](#)

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

NOAA Office of Education - [Environmental Literacy Program](#)

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In North Carolina, ELP supports the Museum of Life and Science (Durham), which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages.

NC-1, 3

Tar-Pamlico and Neuse River Basins

Office of Oceanic and Atmospheric Research (OAR) - [Flood Observations and Warnings](#)

National Severe Storms Laboratory participates in CI-FLOW (Coastal and Inland), which is a multi-agency project to evaluate and test new technologies to produce accurate and timely identification of inland and coastal floods in the Tar-Pamlico and Neuse river basins of coastal North Carolina. The program was initiated in response to the devastating human and economic losses caused by storm-surge and coastal flooding from Hurricanes Floyd and Dennis in 1999.

NC-3

Beaufort

National Marine Fisheries Service (NMFS) - [Beaufort Laboratory](#)

The Southeast Fisheries Science Center's research at the Beaufort laboratory conducts research on sea turtle and marine mammal demographics, life history, health, and habitat use to improve our ability to assess and manage protected species stocks. This research includes the longest running federal "in-water" sea turtle research program and the National Sea Turtle Aging Laboratory. Research is also conducted on gear technology to minimize fishery interactions with protected resources and reduce incidental bycatch mortality. The lab also conducts research and fishery-independent monitoring to support fisheries stock assessments and ecosystem management including the Southeast Fishery-Independent Survey (SEFIS) program, which surveys reef fish throughout the southeastern US Atlantic Ocean waters (working cooperatively with a NMFS funded program based in South Carolina) and performs multibeam mapping to improve knowledge of habitat distribution in southeastern US waters. Finally, the lab conducts fish stock assessments for federally managed species under the South Atlantic Fishery Management Council's jurisdiction; and for Gulf of Mexico and Atlantic menhaden. Sophisticated mathematical, ecological, chemical, biochemical, and satellite imagery and telemetry methodologies are used in the course of research and monitoring endeavors.

National Marine Fisheries Service (NMFS) - [Southeast Regional Office, Habitat Conservation Division Field Office](#)

The Southeast Regional Office has the Beaufort Field Office which is co-located with the National Ocean Service's Center for Coastal Fisheries Habitat Research and with the Beaufort Laboratory of NMFS Southeast Fisheries Science Center. This Office is responsible for implementing NMFS's habitat protection programs in North Carolina and in the adjacent waters of the Atlantic Ocean. In addition to conducting mandated essential fish habitat consultations associated with extensive coastal development activities, the Office participates in state and regional habitat conservation planning and restoration efforts, supports the infrastructure planning activities of North Carolina's Department of Transportation, participates in the planning processes for major federal water development projects such as port expansions, and restores diadromous fish habitat by working with the Federal Energy Regulatory Commission on hydropower licenses, ensuring fish passage, and with stakeholders to remove dams no longer needed.

National Marine Fisheries Service (NMFS) - [Headboat Program](#)

The NMFS headboat program, established in 1972 to develop a database on reef fish populations, collects data from recreational head boats operating in coastal waters of the Southeast United States and has become a principal source of data for reef fishery management in both the Gulf of Mexico and the United States South Atlantic. These data are used in landings reports, stock assessment modeling, and management advice for many important fish stocks. The program is based at the NMFS/Southeast Fisheries Science Center Beaufort Laboratory, and headboat samplers are located throughout the region.

National Ocean Service (NOS) - NOAA Beaufort Laboratory

The NOAA Beaufort Laboratory, opened in 1899, is the second oldest federal marine laboratory and home to scientists from NOAA's National Marine Fisheries Service and National Ocean Service. Operated by the National Centers for Coastal Ocean Science since 1999, this 60,000 square-foot lab on Pivers Island is recognized for a variety of research, including: seagrasses, coral reefs, harmful algal blooms, seafloor mapping, aquaculture, and salt marsh ecology. The lab also houses the North Carolina Coastal Reserve and National Estuarine Research Reserve, which serve as living labs for scientists and students to learn about coastal systems. The lab has a full SCUBA diving roster, small boats, aquaculture systems, high-tech labs for cell analysis, necropsy facilities, electronics workshops, classrooms, and a large auditorium.

Office of Oceanic and Atmospheric Research (OAR) and Office of the Chief Information Officer (CIO) - [N-Wave NOAA Science Network](#)

N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

[Durham](#)

Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at Museum of Life and Science](#)

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

[New Bern](#)

National Marine Fisheries Service (NMFS) - [Office of Law Enforcement](#)

NOAA's Office of Law Enforcement is the only conservation enforcement program (Federal or State) that is exclusively dedicated to Federal fisheries and marine resource enforcement. Its mission is to protect global marine resources by enforcing domestic laws and international treaties and obligations dedicated to protecting wildlife and their natural habitat.

Our special agents and enforcement officers ensure compliance with these laws and take enforcement action if there are violations. Effective fisheries law enforcement is critical to creating a level playing field for U.S. fishermen and enabling sustainable fisheries to support vibrant coastal communities. The New Bern field office is part of the Office of Law Enforcement's Southeast Division.

Newport/Morehead City

National Weather Service (NWS) - [Weather Forecast Office](#)

Located in Newport, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of northeastern North Carolina. This office also provides marine forecasts and warnings for most of the North Carolina coast including the Albemarle and Pamlico sounds. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

Roanoke Island, Pine Knoll Shores

NOAA Office of Education - [Environmental Literacy Program](#)

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In North Carolina, ELP supports the North Carolina Aquarium on Roanoke Island (Dare), which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages. ELP supports the North Carolina Aquarium on Roanoke Island and the North Carolina Aquarium at Pine Knoll Shores (Carteret) as members of the Coastal Ecosystem Learning Center (CELC) Network, which is a consortium of 25 aquariums and marine science education centers working together to engage the public in protecting coastal and marine ecosystems.

NC-3, 7

Cape Hatteras

National Ocean Service (NOS) - [U.S.S. Monitor National Marine Sanctuary](#)

Since its designation in 1975 as the Nation's first national marine sanctuary, the *Monitor* National Marine Sanctuary has protected and preserved the wreck site of the Civil War vessel, the USS *Monitor*. For more than a century, the *Monitor* laid undiscovered and protected by nature in 76 meters of water just 25 kilometers off Cape Hatteras, N.C. In August of 1973, scientists aboard Duke University's research vessel *Eastward* located the *Monitor*. Continuing in the spirit of preserving America's maritime heritage, the *Monitor* NMS has conducted archaeological expeditions off the North Carolina coast to

document and survey other historically significant shipwrecks, such as those sunk during World War II's Battle of the Atlantic.

Through partnerships with the State of North Carolina, East Carolina University, University of North Carolina Coastal Studies Institute, and the National Park Service, both Axis and Allied shipwrecks have been surveyed for nomination to the National Register of Historic Places. The *Monitor* NMS also works closely with its partners, such as the NC Aquariums, the Graveyard of the Atlantic Museum, and school districts to support science, technology, engineering, and math education throughout the region. The sanctuary relies on input from a citizen advisory council representing sanctuary constituent groups, who provide advice on sanctuary activities and management actions. By addressing current management issues and anticipating future challenges, we strive to preserve and protect our Nation's maritime heritage for this and future generations.

Manteo

Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at North Carolina Aquarium](#)

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

NC-4

Chapel Hill

Office of Oceanic and Atmospheric Research (OAR) - [Carolinas Integrated Sciences and Assessments](#)

The Carolinas Integrated Sciences and Assessments (CISA) is a cooperative agreement between NOAA's Climate Program Office (CPO) and the University of South Carolina. It is one of several Regional Integrated Sciences and Assessments (RISA) teams contributing to the development of knowledge, expertise, and abilities of decision-makers to plan and prepare for climate variability and change. CISA conducts applied research in North Carolina and South Carolina that incorporates climate information into water, health, coastal management, and decision making. The team investigates how decision makers currently use climate information to manage water and how such use could be expanded most beneficially. CISA's research includes drought monitoring and assessment, watershed modeling, coastal climatology, adaptation, and climate assessment activities for the Carolinas. Researchers at CISA work in collaboration with stakeholders to identify and develop effective methods of providing climate science, data, and education around these issues. Core partners of CISA include the University of South Carolina, the Southeast Regional Climate Center (SERCC), and the South Carolina Sea Grant Consortium.

Raleigh

National Environmental Satellite, Data, and Information Service (NESDIS) - [National Centers for Environmental Information](#) - [Southeast Regional Climate Center](#)

NOAA NCEI's six Regional Climate Centers (RCCs) support the development and delivery of a wide range of place-based climate science and information products and services to assist decision makers in making informed decisions. The RCCs are a federal-university cooperative effort that supports the operational production and delivery of climate data and information to decision-makers at regional levels. The RCCs also participate in basic and applied climate research as well as user engagement and outreach activities. The service provided by the RCCs has evolved through time to become an efficient, user-driven program that exemplifies many of the components that have been cited for effective regional climate services.

National Ocean Service (NOS) - [Regional Geodetic Advisor](#)

The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in Raleigh, North Carolina serving the Mid-Atlantic region – North Carolina, Delaware, Georgia, Puerto Rico, Maryland, South Carolina, the Virgin Islands, Virginia, and Washington D.C. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

National Weather Service (NWS) - [Weather Forecast Office](#)

Located at the Centennial Campus of North Carolina State University, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of the northern Piedmont, northern and central Coastal Plain, and the Sandhills of North Carolina. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards. Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

National Ocean Service (NOS) - [OR&R Regional Preparedness Coordinator](#)

The Regional Preparedness Coordinator is a National Ocean Service (NOS) Disaster Preparedness Program (DPP) employee that resides in a region and serves as a liaison between NOS and its federal, state, and local disaster preparedness and emergency response partners. DPP has a Regional Preparedness Coordinator stationed in Raleigh, North Carolina, serving the Southeast region – North Carolina, South Carolina, Georgia, and Florida. The DPP supports NOS, and federal, state, and local partners in their ability to assess risks and respond quickly and effectively to natural disasters and pollution events. The DPP provides a breadth of preparedness, response, and recovery services to allow NOS and our partners move through the emergency management cycle efficiently, safely, and effectively including planning, training, exercises, response coordination, continuous improvement, and long-term recovery.

Office of Oceanic and Atmospheric Research (OAR) - [Ultraviolet Radiation Monitoring Network](#)

The Earth System Research Laboratory Global Monitoring Laboratory (ESRL/GML) operates an ultraviolet radiation (UV) monitoring network site in Raleigh (NEUBrew). These measurements are done as part of ESRL/GML's research on the Earth's surface radiation budget. Research efforts are devoted to the extent and cause of observed variations in long-term radiation and meteorological measurements, using satellite observations and climate model calculations. In addition, observations of spectral solar radiation are made for remote sensing of certain atmospheric constituents and spectral

solar UV is measured for the investigation of the interaction of ozone and solar radiation. ESRL/GML also provides essential instrument calibration services for national and worldwide partner UV monitoring networks.

NC-5

Boone

Office of Oceanic and Atmospheric Research (OAR) - [Surface Aerosol Monitoring](#)

NOAA's Earth System Research Laboratory Global Monitoring Laboratory (ESRL/GML) operates surface-based aerosol monitoring sites in six states and one territory (Puerto Rico). ESRL/GML's aerosol monitoring capabilities include continental sites in response to the finding that human activities primarily influence aerosols on regional/continental scales rather than on global scales. Aerosols create a significant perturbation of the Earth's radiative balance on regional scales. The measurements made include aerosol optical properties (how the particles absorb and scatter solar radiation), aerosol number concentration and chemical composition of the aerosol particles. The site is a partnership with Appalachian State University.

NC-7

Wilmington

National Weather Service (NWS) - [Weather Forecast Office](#)

Located in Wilmington, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of southeastern North Carolina and northeastern South Carolina. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards. Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar. The radar data enables forecasters to issue warnings for tornadoes, thunderstorms, and flash floods.

Fort Fisher

NOAA Office of Education - [Environmental Literacy Program](#)

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In North Carolina, ELP supports the North Carolina Aquarium at Fort Fisher (New Hanover) as a member of the Coastal Ecosystem Learning Center (CELC) Network, which is a consortium of 25 aquariums and marine science education centers working together to engage the public in protecting coastal and marine ecosystems.

NC-10

Asheville

National Environmental Satellite, Data, and Information Service (NESDIS) - [National Centers for Environmental Information](#)

NOAA's National Centers for Environmental Information (NCEI) are responsible providing regional, national, and international coordination and leadership on behalf of NOAA and the United States governments, as well as hosting and providing access to one of the most significant archives on earth, with comprehensive oceanic, atmospheric, and

geophysical data. From the depths of the ocean to the surface of the sun and from million-year-old tree rings to near real-time satellite images, NCEI is the Nation's leading authority for environmental information. By preserving, stewarding, and maximizing the utility of the Federal government's billion-dollar investment in high-quality environmental data, NCEI remains committed to providing products and services to private industry and businesses, local to international governments, academia, as well as the general public. NCEI headquarters are located in Asheville, North Carolina with other major locations in Boulder, Colorado; Silver Spring, Maryland; and Stennis Space Center, Mississippi.

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

National Environmental Satellite, Data, and Information Service (NESDIS) - [Center for Satellite Applications and Research](#) - [Cooperative Institute for Satellite Earth System Studies](#)

The Cooperative Institute for Satellite Earth System Studies (CISESS) was formed through a national consortium of academic, non-profit, and community organizations, with leadership from the University of Maryland College Park (UMCP) and North Carolina State University with principal locations in College Park, Maryland and Asheville, North Carolina. CISESS is administered as part of the NOAA/NESDIS/STAR Cooperative Research Program Division, which is the first experiment by NOAA and academic institutions to engage a geographically dispersed, diverse set of more than 20 partner institutions across the United States to address environmental change, their prediction, and potential impacts. The CISESS campus in Asheville is an Inter-Institutional Research Center within the UNC System, where it is known as the North Carolina Institute for Climate Studies. CISESS is co-located with NOAA's National Centers for Environmental Information in Asheville, NC.

National Environmental Satellite, Data, and Information Service (NESDIS) - [Office of Satellite Ground Systems \(OSGS\)](#) - [Comprehensive Large Array-data Stewardship System \(CLASS\)](#)

The Comprehensive Large Array Storage System (CLASS) is NOAA's premiere online facility for the distribution of NOAA and US Department of Defense (DoD) Polar-orbiting Operational Environmental Satellite (POES) data, NOAA's Joint Polar Satellite System (JPSS) data, the joint NOAA-NASA Suomi National Polar Partnership data, NOAA's Geostationary Operational Environmental Satellite (GOES) data, and derived data, in situ data, and other large data sets. The Asheville, NC site is the primary location for ingest, archival, and dissemination of NOAA data archive holdings. The site ingests approximately 6 terabytes of environmental data daily and disseminates 700TB monthly to academia, industry, and other government agencies.

Office of Oceanic and Atmospheric Research (OAR) and Office of the Chief Information Officer (CIO) - [N-Wave NOAA Science Network](#)

N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

[NC-11 Asheville](#)

National Environmental Satellite, Data, and Information Service (NESDIS) - [National Centers for Environmental Information](#)

NOAA's National Centers for Environmental Information (NCEI) are responsible for hosting and providing access to one of the most significant archives on earth, with comprehensive oceanic, atmospheric, and geophysical data. From the depths of the ocean to the surface of the sun and from million-year-old tree rings to near real-time satellite images, NCEI is the Nation's leading authority for environmental information. By preserving, stewarding, and maximizing the utility of the Federal government's billion-dollar investment in high-quality environmental data, NCEI remains committed to providing products and services to private industry and businesses, local to international governments, academia, as well as the general public. NCEI headquarters are located in Asheville, North Carolina with other major locations in Boulder, Colorado; Silver Spring, Maryland; and Stennis Space Center, Mississippi.

National Environmental Satellite, Data, and Information Service (NESDIS) - [Cooperative Institute for Climate and Satellites](#)

In 2009, the Cooperative Institute for Climate and Satellites (CICS) was formed through a national consortium of academic, non-profit, and community organizations, with leadership from the University of Maryland College Park (UMCP) and North Carolina State University with principal locations in College Park, Maryland and Asheville, North Carolina. CICS is administered as part of the NOAA/NESDIS/STAR Cooperative Research Program Institutes, which is the first experiment by NOAA and academic institutions to engage a geographically dispersed, diverse set of more than 20 partner institutions across the United States to address environmental change, their prediction, and potential impacts. CICS-NC is an Inter-Institutional Research Center with the UNC System, where it is known as the North Carolina Institute for Climate Studies. CICSNC is co-located with NOAA's National Centers for Environmental Information in Asheville, NC. CICS's cooperative agreement was renewed for an additional five years in 2014.

[NC-13](#)

National Ocean Service (NOS) - [Ocean Guardian School Program](#)

An Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries. Funds are provided to schools at \$4,000 per year if the school makes this commitment by proposing and then implementing a school- or community-based conservation project. Once the school has completed its project, the school receives official recognition as a NOAA Ocean Guardian School. To date, the Ocean Guardian School Program has partnered with more than 147 schools and has reached more than 80,400 students.

National Ocean Service (NOS) - Students for [Zero Waste Week](#)

Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

[Coastal](#)

National Marine Fisheries Service (NMFS) - [Cape Fear River Partnership](#)

NOAA has formed a unique partnership of key federal, state, local, academic, and other organizations in North Carolina to develop a multi-year action plan that will use a broad range of tools and capabilities to provide long-term habitat-based solutions for the most pressing challenges for migratory fish in the Cape Fear River Watershed. Building on the

momentum created by constructing a fishway on the first barrier on the river—the Army Corps' Lock and Dam #1—we will address other issues affecting fish and recreational use of the Cape Fear River. The action plan will identify threats to healthy migratory fish populations, outline actions to improve water quality, habitat conditions, and fish passage, and determine community and economic benefits of improved migratory fish populations.

National Marine Fisheries Service (NMFS) - [Deep-Sea Coral Research and Technology Program](#)

Deep-sea coral habitats are complex structures that provide habitat for many diverse fish and invertebrate communities including commercially important species such as grouper, snapper, sea bass, rockfish, and crab. The Deep Sea Coral Research and Technology Program is the nation's resource for information on deep-sea coral and sponge ecosystems. The Program works with other NOAA offices and external partners to conduct research cruises off the Southeastern U.S. Using sonar technology and remotely operated and manned submersibles, new deep-sea coral reefs were discovered off the Southeastern seaboard. This field research also provides targeted analyses of existing information about deep-sea coral ecosystems, the distribution and intensity of fishing activities that may damage deep-sea corals in federal waters, and coral and sponge bycatch in fisheries. Findings will improve knowledge about deep-sea life off the Southeastern U.S. and inform the South Atlantic Fishery Management Council's efforts to manage commercial and recreational fisheries.

National Marine Fisheries Service (NMFS) - [Cooperation with States Program](#) and [Species Recovery Grants](#)

Under the authority of section 6 of the Endangered Species Act, the Cooperation with States Program brings states, NMFS, and other partners together to recover threatened and endangered species. A total of 25 U.S. territories and coastal states, including North Carolina, currently participate in this program. Competitive grants are awarded to states through the Species Recovery Grants to States Program to support management, monitoring, research and outreach efforts for species that spend all or a portion of their life cycle in state waters. The funded work is designed to prevent extinctions or reverse the decline of species, and restore ecosystems and their related socioeconomic benefits. The North Carolina Wildlife Resources Commission has received funding through this program to support the recovery of Atlantic sturgeon, shortnose sturgeon, and sea turtles. .

National Marine Fisheries Service (NMFS) - [National Marine Mammal Stranding Network](#) and [John H. Prescott Marine Mammal Rescue Assistance Grant Program](#)

The National Marine Mammal Stranding Network and its trained professionals respond to dead or live marine mammals in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Network provides valuable environmental intelligence, helping NOAA establish links among the health of marine mammals, coastal ecosystems, and coastal communities as well as develop effective conservation programs for marine mammal populations in the wild. There are seven stranding network members in the state. NOAA Fisheries funds eligible members of the Stranding Network through the competitive John H. Prescott Marine Mammal Rescue Assistance Grant Program. For fiscal year 2020, 43 competitive Prescott Grants were awarded for a total of \$3.7 million nationwide, with two awards totalling \$199,353 going to North Carolina: North Carolina Department of Environmental Quality and the University of North Carolina at Wilmington.

National Marine Fisheries Service (NMFS) - [Sea Turtle Salvage and Stranding Network](#)

The Sea Turtle Stranding and Salvage Network (STSSN) was formally established in 1980 to collect information on and document strandings of marine turtles along the U.S. Gulf of Mexico and Atlantic coasts. The network, which includes federal, state and private partners, encompasses the coastal areas of the eighteen-state region from Maine to Texas, and includes portions of the U.S. Caribbean. Data gathered by the Network helps inform bycatch reduction efforts, monitor factors affecting turtle health, and provide other information needed for sea turtle management and population recovery.

National Marine Fisheries Service (NMFS) - [Fishery Statistics Office](#)

Field agents serve as the principle data collection agent for marine fisheries throughout the Southeast US (NC-TX). They implement and coordinate surveys involving the collection of fishery related data from the public. Responsibilities and functions are to develop, implement, operate, and manage an integrated fishery statistical data acquisition program for research and fishery management. In North Carolina, field agents are stationed in Wilmington and Manteo.

National Ocean Service (NOS) - [National Water Level Observation Network](#)

NOS operates six long-term, continuously operating tide stations in the state of North Carolina which provide data and information on tidal datum and relative sea level trends, and are capable of producing real-time data for storm surge warning. These stations are located at Duck, Oregon Inlet, USCG Cape Hatteras, Beaufort (Duke Marine Lab), Wilmington, and Wrightsville Beach. Each station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land.

National Ocean Service (NOS) - [Navigation Manager](#)

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in North Carolina. They help identify the navigational challenges facing marine transportation in North Carolina and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. The Office of Coast Survey has a navigation manager in Norfolk, Virginia to support mariners and stakeholders in the Mid-Atlantic region.

National Ocean Service (NOS) - [Navigation Response Team](#)

The Office of Coast Survey (OCS) maintains the nation's nautical charts and publications for U.S. coasts and the Great Lakes. OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with navigational challenges. The Office of Coast Survey's Navigation Response Branch (NRB) conducts routine and emergency hydrographic surveys; and working with the regional Navigation Managers, navigation response teams (NRT) work around-the-clock after storms to speed the reopening of ports and waterways. During emergency response, the NRTs provide time-sensitive information to the U.S. Coast Guard or port officials, and transmit data to NOAA cartographers for updating the Coast Survey's suite of navigational charts. NRT-Fernandina is homeported in Fernandina Beach, FL and is able to respond within 24 to 48 hours.

National Ocean Service (NOS) - [Coastal and Estuarine Land Conservation Program](#)

The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. Subject to availability of funding, the program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. Since 2002, the program has protected more than 110,000 acres of coastal land nationally, including over 16,000 acres protected as in-kind matching contributions. One project in North Carolina was successfully completed, and this land is protected in perpetuity.

National Ocean Service (NOS) – [National Coastal Zone Management Program](#)

Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the North Carolina Department of Environment Quality to implement the National Coastal Zone Management Program in North Carolina. NOAA provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

National Ocean Service (NOS) – [Digital Coast](#)

The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA's Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related the tools, training, and information needed to make these data useful for coastal decision makers.

National Ocean Service (NOS) – [National Coastal Resilience Fund](#)

The National Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to restore, increase, and strengthen natural infrastructure to protect coastal communities, while also enhancing habitat for fish and wildlife. In North Carolina, the NCRF awarded one project in FY18 and FY19 and four projects in FY20.

National Ocean Service (NOS) – [Emergency Coastal Resilience Fund](#)

The Emergency Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to increase the resilience of coastal communities within areas affected by Hurricanes Florence and Michael, Typhoon Yutu, and the coastal California wildfires in 2018. North Carolina received funds to implement nine projects. Project goals include, establishing an incentive-based state framework to support comprehensive local community resilience planning, restoring hydrologic conditions to provide community flood resilience benefits in the floodplain, and installing living shorelines to protect important community infrastructure as well as protecting and restoring acres of salt marsh, oyster and upland habitat.

National Ocean Service (NOS) - [North Carolina National Estuarine Research Reserve](#)

The 10,568-acre North Carolina Research Reserve is managed by the North Carolina Department of Environmental Quality. The site is protected for long-term research and monitoring, stewardship, and education. The site has four components: Currituck Banks, Rachel Carson, Masonboro Island, and Zeke's Island. The reserve has been the site of many research projects on a variety of important topics including living shorelines, invasive species, productivity of benthic microalgae, the use of dredged material to nourish salt marshes, and effects of feral horses on salt marsh productivity. The education and training programs enhance estuarine awareness and provide a critical link between scientific research results and coastal management policies. The reserve is also a partner in the NOAA Sentinel Site Program.

National Ocean Service (NOS) – [Margaret A. Davidson Graduate Fellowship](#)

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at the North Carolina National Estuarine Research Reserve will focus their research on predicting marsh bird population response to sea level rise and providing information for management decisions and a framework for other marsh species.

National Ocean Service (NOS) - [OR&R Regional Preparedness Coordinator](#)

The Regional Preparedness Coordinator is a National Ocean Service (NOS) Disaster Preparedness Program (DPP) employee that resides in a region and serves as a liaison between NOS and its federal, state, and local disaster preparedness and emergency response partners. DPP has a Regional Preparedness Coordinator stationed in Raleigh, North Carolina, serving the Southeast region – North Carolina, South Carolina, Georgia, and Florida. The DPP supports NOS, and federal, state, and local partners in their ability to assess risks and respond quickly and effectively to natural disasters and pollution events. The DPP provides a breadth of preparedness, response, and recovery services to allow

NOS and our partners move through the emergency management cycle efficiently, safely, and effectively including planning, training, exercises, response coordination, continuous improvement, and long-term recovery.

National Ocean Service (NOS) - [Scientific Support Coordinator and Regional Resource Coordinator](#)

NOAA's Office of Response and Restoration (OR&R) brings decades of experience, technical expertise and scientific analysis in response to oil and hazardous chemical spills. In addition to events that draw the national eye like Hurricane Sandy, OR&R also supports response to local emergencies. Eleven regionally based Scientific Support Coordinators (SSCs) harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental tradeoffs, best practices, resources at risk, oil science and properties, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC works directly with the U.S. Coast Guard and the U.S. Environmental Protection Agency to provide critical scientific support to the Federal On-Scene Coordinator. OR&R also helps develop preparedness plans that identify spill response actions with the greatest environmental benefit and trains hundreds of members of the response community each year on the scientific and technical aspects of spills.

OR&R's Regional Resource Coordinators (RRCs) provide scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. The goal of the RRCs efforts is to determine, often through the Damage Assessment, Remediation, and Restoration Program, the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. To date, DARRP and co-trustees have recovered over \$22.9M for restoration of natural resources injured by a waste site in North Carolina.

National Ocean Service (NOS) - [Atlantic Environmental Response Management Application](#)

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Atlantic Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and decision makers. ERMA staff continued to work closely with Federal and State agencies for drills, hurricane response, and incidents. Maintained habitat data for sensitive species. Ensured data was kept up-to-date and data collection methods were kept consistent.

National Ocean Service (NOS) - [Marine Debris Projects and Partnerships](#)

The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, education and outreach, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP Southeast Regional Coordinator supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences. In North Carolina, the MDP is working with the National Park Service to develop and install an outreach and educational exhibit on marine debris in the Cape Lookout National Seashore. The MDP is also partnering with the North Carolina Coastal Federation to remove over 115 tons of Hurricane Florence debris from the southeastern waters of North Carolina and develop recommendations for constructing resilient docks and piers. Additionally, The North Carolina Coastal Federation will remove about 40 vessels left in the wake of Hurricane Florence, and 20 more from the Albemarle-Pamlico Estuary remaining after past hurricanes. The University of North Carolina Wilmington MarineQuest program is leading the Turtle Trash Collector Program to educate students on ways to prevent and reduce marine debris through hands-on and virtual

lessons focused on simulated sea turtle necropsies. The MDP has also worked with state and local governments to develop the North Carolina Incident Waterway Debris Response Guide and implement the Southeast Marine Debris Action Plan.

National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Mid-Atlantic and Southeast\)](#)

The U.S. Integrated Ocean Observing System (IOOS®) is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. The Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) is one of the 11 Regional Associations and it extends from Cape Hatteras to Cape Cod including the estuaries and the continental shelf waters. MARACOOS provides the necessary ocean observing, data management, and forecasting capacity to systematically address prioritized regional themes including maritime safety, ecosystem based management, water quality, coastal inundation, and offshore energy development. The Southeast Coastal Ocean Observing Regional Association (SECOORA) coordinates coastal and ocean observing activities, and facilitates continuous dialogue among stakeholders so that the benefits of a sustained coastal and ocean observing system can be realized. SECOORA's vision is to protect people by providing comprehensive information and tools, conserve the marine environment by providing ocean current, wind, and ecosystem condition information, and enhance the coastal economy by providing information and models to facilitate more effective decision-making.

National Weather Service (NWS) - [Buoys](#)

The National Weather Service (NWS), through its National Data Buoy Center (NDBC), develops, deploys, operates, and maintains the current national data buoy network of moored and drifting weather buoys and land stations that serve all of the Nation's coastal states and territories. Within this network, 110 of the buoys and 51 of the land stations are maintained directly by NDBC. Located at NASA's Stennis Space Center in Mississippi, supports weather and marine warning and forecast services in real time by providing deep ocean and coastal meteorological and oceanographic observations. These data provide valuable information used by NWS supercomputers to produce computer-generated model forecasts of the atmosphere and climate. NDBC manages the Volunteer Observing Ship program to acquire additional meteorological and oceanographic observations supporting NWS mission requirements. NDBC also supports operational and research programs of NOAA and other national and international organizations.

[Statewide](#)

[National Weather Service \(NWS\) Weather Forecast Offices \(WFO\)](#) are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of North Carolina. There are 122 [WFOs nationwide](#) of which three are in North Carolina. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media, weather.gov, and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction

[centers](#) and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current North Carolina weather, visit www.weather.gov and, on the national map, click on the relevant county or district.

National Marine Fisheries Service (NMFS) - [Restoration Center](#)

North Carolina contains the largest estuarine system of any Atlantic Coast state. This 2.3 million acre network of habitats provides productive and diverse habitats for finfish, shellfish, and other wildlife, and recreation for millions of people. NMFS Habitat Restoration Center works with numerous partners in North Carolina to restore salt marshes, shorelines, and oyster reefs; and to remove dams that block migratory fish habitat. We've restored 900 acres and opened up 348 stream miles through our efforts. Several oyster restoration projects are currently underway in the state which will provide habitat for fisheries and protect the state's shorelines from erosion. Through the Damage Assessment Remediation and Restoration Program, the Restoration Center also collaborates with other agencies, industry, and citizens to protect and restore coastal and marine resources in North Carolina threatened or injured by oil spills, releases of hazardous substances, and vessel groundings. NOAA and co-trustees are currently scoping for restoration projects in the Cape Fear Basin as part of compensation for impacts from the Kerr-McGee wood treatment facility in Navassa, NC.

National Marine Fisheries Service (NMFS) - [Southeast Regional Office](#) and [Southeast Fisheries Science Center](#)

NMFS studies, protects and conserves living marine resources to promote healthy, functioning marine ecosystems, afford economic opportunities and enhance the quality of life for the American public. NMFS' Southeast Regional Office (headquartered in Saint Petersburg, FL) and Southeast Fisheries Science Center (headquartered in Miami, FL) are responsible for living marine resources in federal waters of the Gulf of Mexico, South Atlantic, and U.S. Caribbean. Using the authorities provided by the *Magnuson-Stevens Fishery Conservation and Management Act*, *Endangered Species Act*, *Marine Mammal Protection Act* and other federal statutes, the Southeast Regional Office and Southeast Fisheries Science Center partner together to assess and predict the status of fish stocks, marine mammal and sea turtle populations, as well as other protected resources, including coral. Additionally, in collaboration, they develop and ensure compliance with fishery regulations, restore and protect habitat, and recover threatened and endangered species in waters off North Carolina and throughout the Southeast Region. The Southeast Regional Office also fosters sustainable [aquaculture](#) in the region, with two Regional Aquaculture Coordinators that act as a liaison acting as a liaison between federal and state agencies to assist in permitting and coordination activities, supporting aquaculture outreach and education, and collaborating with industry, academia and other stakeholders on regional marine aquaculture issues. The Southeast Fisheries Science Center implements a multi-disciplinary science and research program in support of living marine resource management. The Science Center develops the scientific information required for fishery resource conservation; fishery development and utilization; habitat conservation; the protection of marine mammals, sea turtles and other protected species; impact analyses and environmental assessments for management plans and/or international negotiations; and pursues research to answer specific needs in areas of population dynamics, fishery economics, fishery engineering, food science, and fishery biology.

National Weather Service - [NEXRAD \(WSR-88D\) Systems](#)

NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which three are in North Carolina.

National Weather Service (NWS) - [Automated Surface Observing Systems Stations](#)

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are 18 ASOS stations in North Carolina.

National Weather Service (NWS) - [Cooperative Observer Program Sites](#)

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals' energy bills monthly. There are 199 COOP sites in North Carolina.

National Weather Service (NWS) - [NOAA Weather Radio All Hazards Transmitters](#)

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 21 NWR transmitters in North Carolina.

Office of Oceanic and Atmospheric Research (OAR) – [North Carolina Sea Grant College Program](#)

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. North Carolina Sea Grant is your link to research and resources for a healthier coast. Via integrated research, outreach and education programs, we provide unbiased, science-based information on existing and emerging issues affecting N.C. coastal communities and ecosystems. Since 1970, North Carolina Sea Grant has been a valuable resource for scientists, educators, local officials, government agencies, coastal businesses and the public. With headquarters at North Carolina State University in Raleigh, the program also has coastal offices in Manteo, Morehead City and Wilmington. Current projects focus on healthy coastal ecosystems, sustainable

fisheries and aquaculture, resilient communities and economies, and environmental literacy and workforce development. Administrative offices are located in Raleigh. Extension agents are located in Manteo, Morehead City, and Wilmington.

NOAA Office of Education - [Environmental Literacy Program](#)

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In North Carolina, ELP supports the Blue Heron Bowl in North Carolina, one of 25 regional competitions of the National Ocean Sciences Bowl (NOSB). The NOSB is an academic competition that engages high school students in learning about ocean sciences and related STEM careers while helping them become knowledgeable citizens and environmental stewards. ELP supports the American Meteorological Society's DataStreme courses for K-12 educators through a grant and in-kind support. These courses use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

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